



MATHEMATICAL MODEL OF SHLIOMIS MODEL BASED FERROFLUID LUBRICATED ROUGH POROUS CONVEX PAD SLIDER BEARING WITH EFFECT OF SLIP VELOCITY

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ABSTRACT

An attempt has been made to analyse the performance characteristics of a Shliomis model based ferrofluid lubrication of a rough porous convex pad slider bearing with effect of slip velocity. Regarding roughness, the stochastic method adopted by Christensen and Tonder to finds the application here in statistical averaging of the associated Reynolds equation. The graphical representation suggests that the adverse effect of surface roughness can be reduced to certain extent by the positive effect of Shliomis model based ferrofluid lubrication. Further, for this type of bearing system, this model remains more effective as compared to Neuringer-Rosensweig model.

KEYWORDS: Convex Pad Slider Bearing, Roughness, Porosity, Shliomis Model, Pressure, Slip Velocity

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